

**WELDED METALLIC STRUCTURE FOR THE
MANUFACTURE BY COMPRESSION OF MONOBLOC PARTS,
AND PARTS MANUFACTURED FROM SUCH A STRUCTURE**

BACKGROUND OF THE INVENTION

[0001] The present invention relates to the field of the manufacture of rigid and porous one-piece metallic parts of the sleeve, buffer or similar type, and has as its subject the structure of the metallic layer forming the parts.

[0002] The prior art discloses methods for the manufacture of a part of this type, which involve first forming the part by folding or winding at least one layer of a metallic structure over at least one turn, and then subjecting the product obtained to a compression in a preferential direction. A method of this type is described in French Patent Application FR 2 792 559, the content of which is fully incorporated by reference into the present application. The documents GB 878,480, US 2,334,263 and FR 2 527 301, likewise describe a similar method.

[0003] In general terms, these methods involve compacting a metallic structure formed from crimped wire pieces or from a woven or nonwoven cloth or from a knitted fabric. These structures all have disadvantages.

[0004] In the case of the crimped wire ends or pieces of the woven or nonwoven cloth, the crimped wire ends or wire ends resulting from the cutting of the woven cloth panels can become

detached (before, during or after compacting), and can then pollute their surroundings (manufacturing machines, workshop floors, packaging, location where the part is finally fitted, etc.). The compacted parts obtained can also have deficiencies detrimental to their functioning, to their strength, to their stability or the like.

[0005] In the case of the knitted fabric, the maximum capacity and power of the knitting machines limit the diameter of the wire that can be used (generally a maximum of 0.7 mm).

SUMMARY OF THE INVENTION

[0006] To overcome all these disadvantages, the present invention uses a novel structure comprised of a welded metallic cloth in which each wire intersection is welded.

[0007] The invention relates more particularly to a metallic structure for the manufacture of rigid and porous one-piece metallic parts of any form, including a welded metallic cloth in which each wire intersection is welded, and which is capable of undergoing a manufacturing method involving first forming the part by folding or winding at least one layer of the metallic structure over at least one turn and then subjecting the product obtained to a compression in a preferential direction.

[0008] The invention also relates to a rigid and porous one-piece part, of any form, which is formed by the compression of a metallic structure of the above type, previously folded or

wound over at least one turn and in at least one layer.

[0009] The invention will be better understood from the following description, made with reference to the following accompanying figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Figure 1 shows a basic diagram and a general view of a structure according to the invention.

[0011] Figure 2 shows a partial end view of the structure of Figure 1.

DETAILED DESCRIPTION OF THE INVENTION

[0012] It is first noted that, in the prior art, the term "woven cloth" designates structures obtained by weaving, that is to say, by the interlacings of metallic wires, in the same way as for a piece of fabric, in which the wires are not fixed to one another.

[0013] In accordance with the invention, each weft wire (1) is welded to each warp wire (2) so that no wire end can become detached and give rise to the problems mentioned above. The wires are rectilinear and planar so as to assist winding and compacting during the manufacture of a buffer or sleeve, or some other part.

[0014] Since the intersections (3) of the wires are fixed by

welding, they do not slip in relation to one another during compacting. The part obtained is more homogeneous and its hold is much better. Parts of more varied density, porosity and suitability can thus be obtained.

[0015] Finally, with an equivalent mesh aperture, larger wire diameters can be used in the case of welded cloth than in the case of woven cloth or knitted fabric. Since weaving is an operation involving the interlacing of the wires, if the diameter of the wires is too large their rigidity prevents efficient crimping, and therefore, the formation of closely packed meshes. This limitation is not found with welded cloth, since the wires are not crimped. For knitting, this is limited by the power of the machines and, as mentioned above, can be used only for wires of small diameter.